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UNEP Meeting of experts designated by Governments, Intergovernmental and Non-Governmental Organizations on the Ozone Layer

Washington, D.C., 1-9 March 1977

A REPORT TO UNEP ON ATMOSPHERIC RESEARCH ACTIVITIES IN ITALY

Presented by
The Government of Italy

United Nations Environment Programme

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A Report to UNEP on Atmospheric Research Activities in Italy

The Italian National Reseach Council is engaged in some research efforts related to the environment. Within this more general problem, the question of the impact of human activities on the ozone layer is considered in some of its aspects.

The research effort is carried out in some government as well as industrial laboratories. Some research is undertaken in collaboration with other countries.

Italy is favorable to collaborate with any oth er country and to participate with international scientific organizations having the same objectives.

The main fields of activities in which Italy is at present involved or in which it intends to develop research efforts in the near future are:

- modelling of the atmosphere
- atmospheric measurements, both tropospheric and stratospheric
- laboratory atmospheric chemistry

In the modelling field, work is being carried out at the University of Rome and Aquila on 1-D ozone photochemical models and their extension to 3-D models. A fairly elaborate radiative transfer model is now available and sensitivity tests for the effect of multiple scattering are being carried out with the photochemical model.

A 1-D mathematical model is also under preparation at the Politechnique of Milano, aiming to provide a quick and reliable tool to examine and screen kinetics and photochemical reactions of concern in the stratospheric ozone controversy. Emphasis is given to the overall kinetic scheme to be handled as well as to the way of acquiring and processing it by the computing program for the sake of comparison of different proposed reactions and/or kinetic constants.

In the field of stratospheric measurements, the University of Florence, Space Physics Laboratory, is preparing, in collaboration with Queen Mary College, London and Physical Laboratory, Teddington, a submillimeter infrared baloon experiment. The proposed measurements of mixing ratios of nitrogen and cholrine compounds include ClO and $ClONO_2$.

The stratospheric aerosols are studied at the University of Rome and Aquila with two optical radars which are being operated from the ground. An experiment has been prepared to excite the fluorescence of NO_2 with a dye laser. OH will also be studied with this technique.

Research activities are also planned for the tropospheric photochemistry and sink at the University of Ferrare and at the Atmospheric Physics Institute of Bologne.

In the field of atmospheric chemistry, work is going on in the evaluation of nitrogen oxides and chlorine oxides photochemistry at the laboratories of the University of Rome and Camerino.

Industry in Italy is also collaborating on doing some research by itself and being available for any effort aiming to a better understanding of the impact of human activities on the ozone layer.

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